Preliminary Spatial Study of Zooplankton Community Composition of the Lower St. Croix River System

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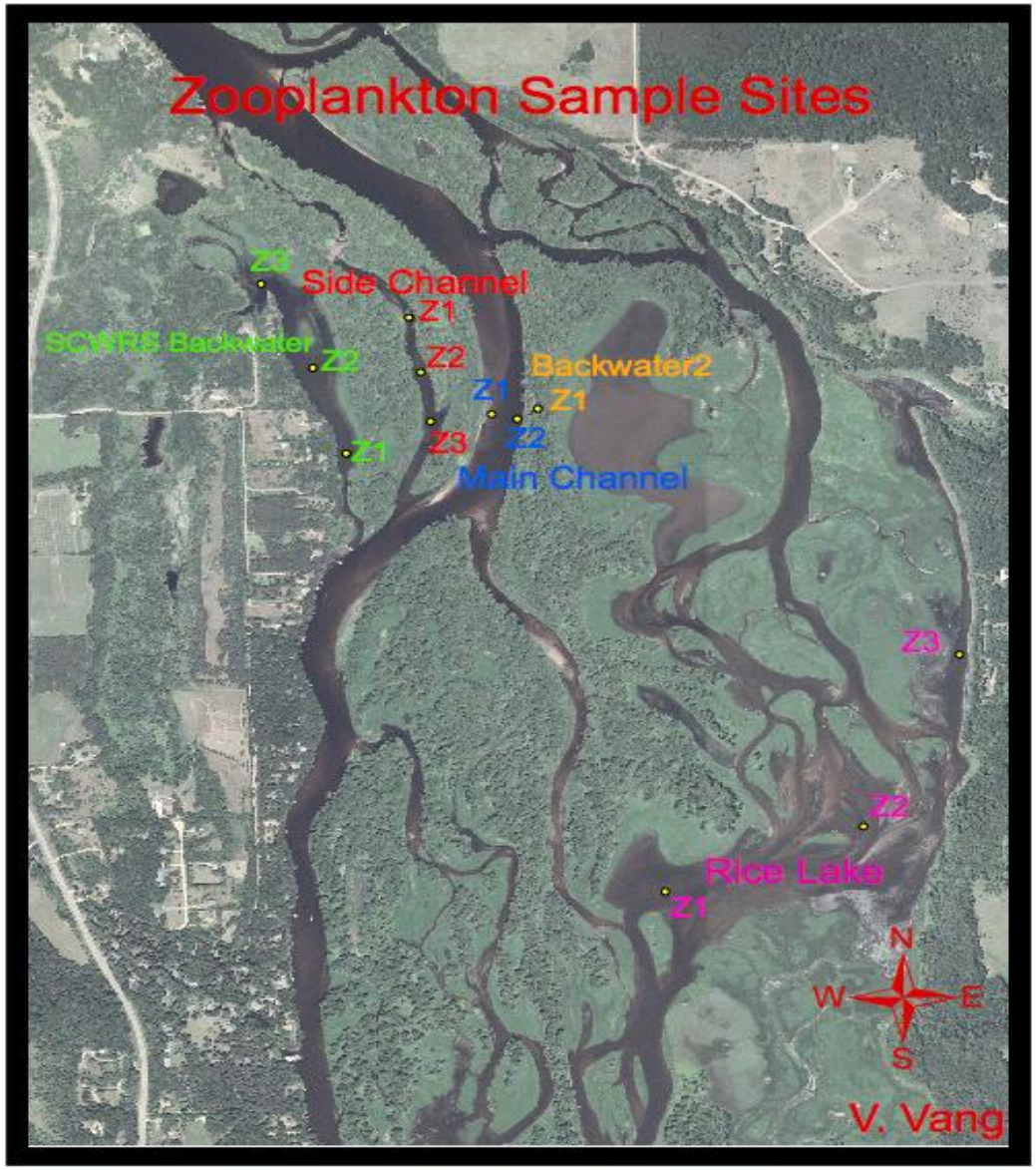
What are zooplankton?

- Tiny aquatic animals that range from micrometers up to 2 millimeters big (a little bigger than a grain of salt).
- Most travel with the flow of the stream.
- 3 main groups were identified in our samples
- Cladocerans, Copepods, and Rotifers

Why study zooplankton?

- Zooplankton are biologically important an aquatic system.
- They consume and break down algae.
- They are preys to other aquatic animals such as fish, bugs, and larger crustaceans




Zooplankton Sample Sites
Z3
Side Channel
Z1
SCWRS Backwater
Z2
Z2
Backwater2
Z1
Z1
Z3
Z2
Z1
Main Channel
Z3
Z2
Rice Lake
Z1
N
W
E
S
V. Vang

Focus of research

1. Comparison of zooplankton community composition in different sub-habitats of the Lower St. Croix.
2. Comparison between 2 standard zooplankton collecting methods.

   Horizontal net (54 um mesh size) vs. Vertical net (30 um mesh size)
3. Compared the difference between lotic and lentic systems

Conclusion

1. Who's king of the zooplankton community?

- Rotifers were expected to be the dominant zooplankton in the river but I found that is not universally true.
- The side channel, backwater2, and Lake St. Croix were dominated by cladocerans.
- Only the SCWRS backwater and Rice Lake were rotifer dominance.
- Who's king? It varies between sub-habitats

2. Which methods works best?

- Standard plankton sampling methods were used, however differences were found between two mesh sizes and tow methods.
- The larger (54um) mesh horizontal tow net lost more rotifers, which biased our sample to crustaceans.
- The vertical smaller (30um) mesh net captured more rotifers, which gave a more accurate representation of the zooplankton community composition of the SCWRS backwater.
- Which methods? Vertical net works best but more research is needed for better comparison.

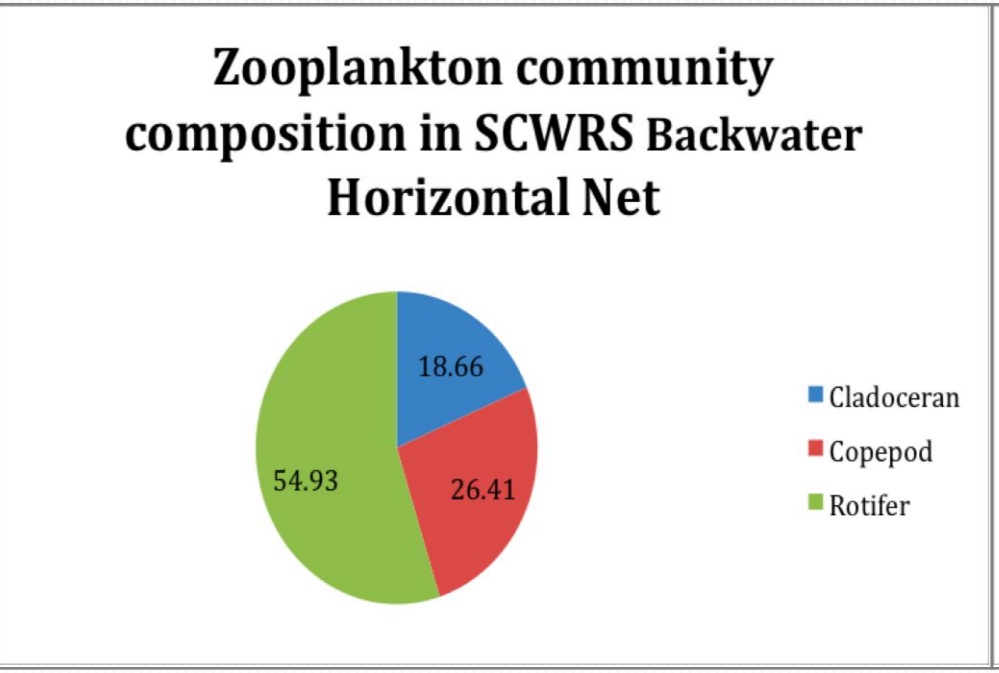


Figure 5

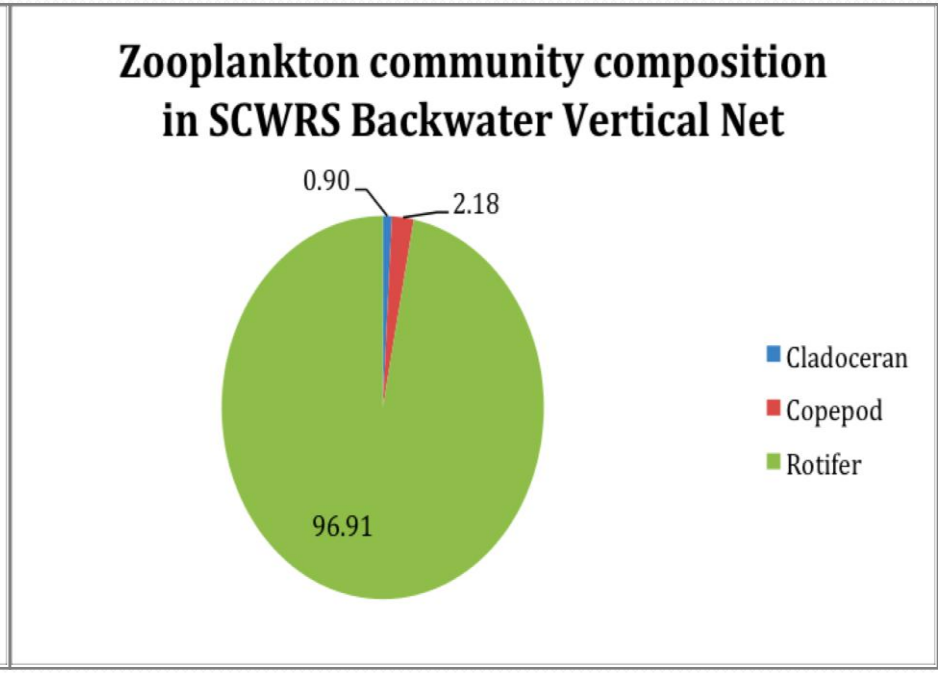


Figure 6

3. Lotic system vs. Lentic system

- Lotic system has flow and our samples had lower numbers of zooplankton densities.
- Lentic system has little to no flow and our samples had far more numbers of zooplankton densities.

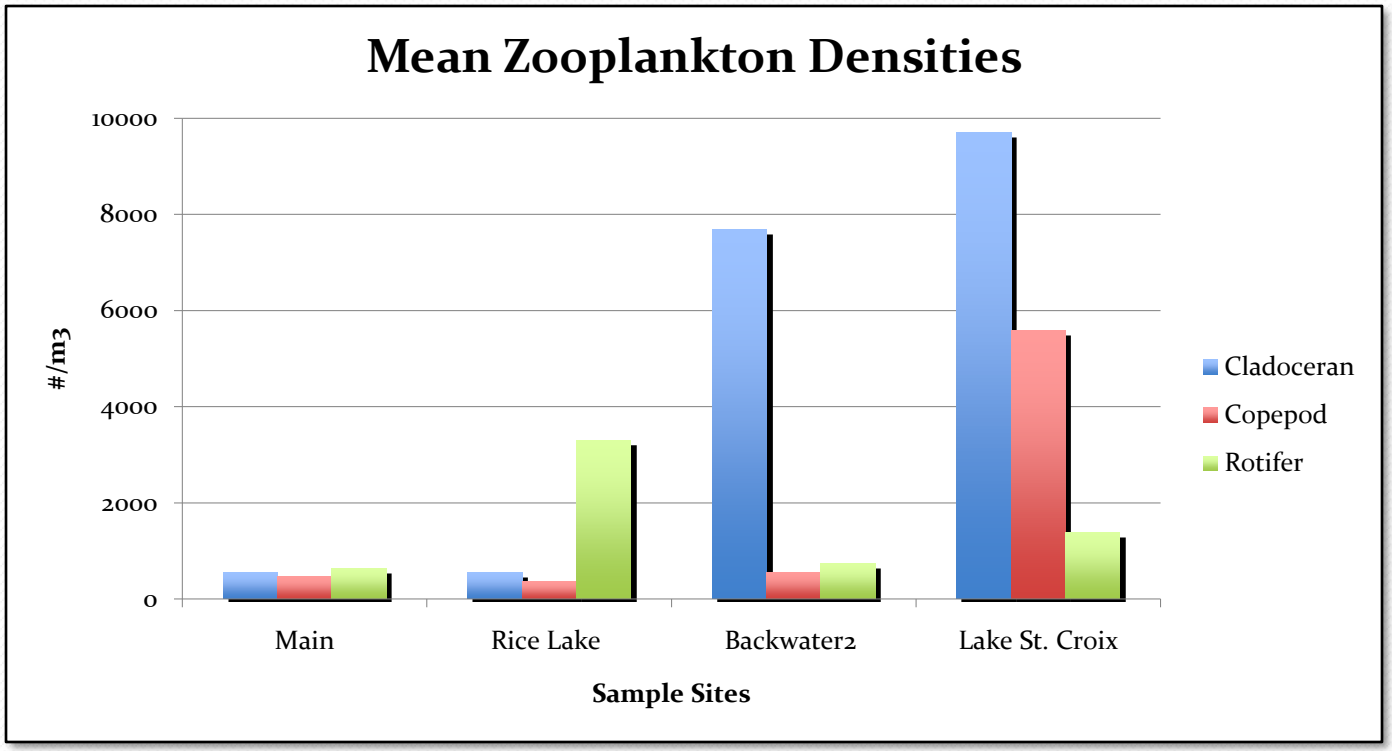


Figure 4

Acknowledgement

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